XMC-TK1-FGX
NVIDIA Tegra K1 Video Processing Unit, Includes 2 SDI Input / Output

Key Features
- NVIDIA® Tegra® K1 Embedded ARM processor
- 2x HD-SDI inputs or 1x 3G-SDI input
- 2x HD-SDI outputs (SMPTE-292M)
- Operating power tunable as low as 20 Watts

Additional Features
- 2x CVBS (NTSC/PAL/SECAM) inputs
- 1x HDMI video output
- Complex input processing with Tegra K1 APU
  - 8GB DDR3L memory
  - 32GB eMMC
  - Kepler 192-core GPGPU
  - 325 GFLOPS CUDA and OpenCL programming
- 1x 10/100/1000 Ethernet
- 3x USB 2.0 interfaces
- 2x UART interfaces
- VPWR auto-switching +5V or +12V
- FGX and Tegra-K1 allows for customer-programmable FPGA options
- Optional: Non-Transparent Bridging to PCIe bus

Overview
WOLF's XMC-TK1-FGX is a revolution in aerospace and defense image capture and processing, leveraging NVIDIA's Kepler technology 28nm Tegra K1 APU and WOLF's frame grabber, with less than 20 Watts power usage.

The WOLF Frame Grabber eXtreme (FGX) provides conversion of video data from one standard to another, with video input and output options for both cutting-edge digital I/O and legacy analog I/O. The FGX uses a Xilinx Artix-7 FPGA to capture video, without disrupting the host SBC.

The XMC-TK1-FGX provides GPU-assisted parallel processing and complex analysis, performing precision intensive operations, such as image processing, video stabilization, filtering, terrain analytics, 3D visualization of geospatial data, object recognition and tracking. By including both the FGX and the Tegra K1 on one board this flexible solution captures and processes images without transferring data between boards, thereby avoiding the SBC data rebroadcast traffic jams that commonly occur with a 2-board solution.

This rugged board is designed to operate in harsh aerospace and defense environments.

Specifications
- High level of ruggedization
  - MIL-STD-810, IPC 6012 Class-3
  - -40° to +85°C operating temperature
  - 40g, 11ms shock
  - 0.2g²/Hz@ 5 - 2000Hz vibration
  - Conduction-cooled or Rugged air-cooled
- Windows and Linux drivers
- XMC form factor: 74×149 mm
- VITA 46.9 I/O compliant mapping for 3U and 6U VPX configurations
- Optional XMC 1.0 or XMC 2.0

The information in this document is preliminary and subject to change.
The information in this document is preliminary and subject to change.